

A New Species of the Sawfly Genus *Nematus* (Hymenoptera, Tenthredinidae) from Hokkaido, Japan

Alexey G. Zinovjev

Zoological Institute, Russian Academy of Sciences, St. Petersburg, 199034, Russia

Abstract *Nematus tiliae* sp. nov. is described from a single female collected on *Tilia maximowicziana* in Japan (Hokkaido). This is the first record of *Tilia* as host plant of *Nematus*.

Key words: Hymenoptera, Tenthredinidae, *Nematus tiliae*, new species, *Tilia maximowicziana*, Japan.

Nematus Panzer (including *Paranematus* Zinovjev and *Pteronidea* Rohwer) is one of the largest genera in the sawfly family Tenthredinidae. However, only 14 species are currently recorded from Japan (Abe & Togashi, 1989). In this paper I describe a sawfly found by Dr. M. Ohara, Hokkaido University, in Hokkaido on *Tilia maximowicziana* Shirasawa. Up to now, within the subfamily Nematinae, only the European *Pristiphora leucopus* Hellén was known to feed on *Tilia*. An interesting brooding behavior of the female will be reported by Dr. S. Kudo, Naruto University of Education, and his collaborators. I cordially thank Dr. A. Shinohara, National Science Museum, Tokyo, for the loan of specimen, and Dr. D. R. Smith, U. S. Department of Agriculture, Washington, D. C., for reviewing the manuscript.

The measurements were taken through an ocular micrometer. Lengths (or widths) of structures were measured as the greatest visible ones, disregarding any parts of segments that may be hidden in articulations (at the largest magnification one unit corresponds to 0.02 mm).

Nematus tiliae Zinovjev, sp. nov.

(Figs. 1–3)

Female (holotype). Head pale reddish yellow, with black spot occupying area around ocelli, extending forward to frontal basin (excluding frontal walls); laterally from frontal area becoming brownish and extending to antennal hollows. Labrum, palpi, and bases of mandibles yellowish, apex of mandible reddish to black. Antenna entirely yellowish. Thorax pale reddish yellow; pronotum and tegula yellow; most of mesoscutal median lobe black, pale laterally and behind; each of mesoscutal lateral lobes with large black longitudinal stripe confluent with small black spot behind medially; mesoscutellum posteriorly infuscate; metanotum pale, slightly infuscate near

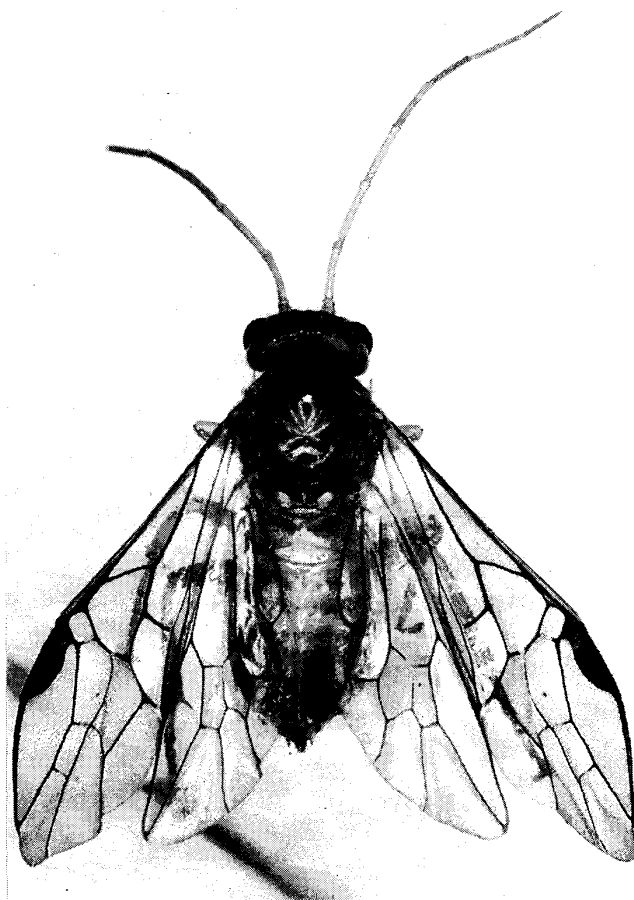
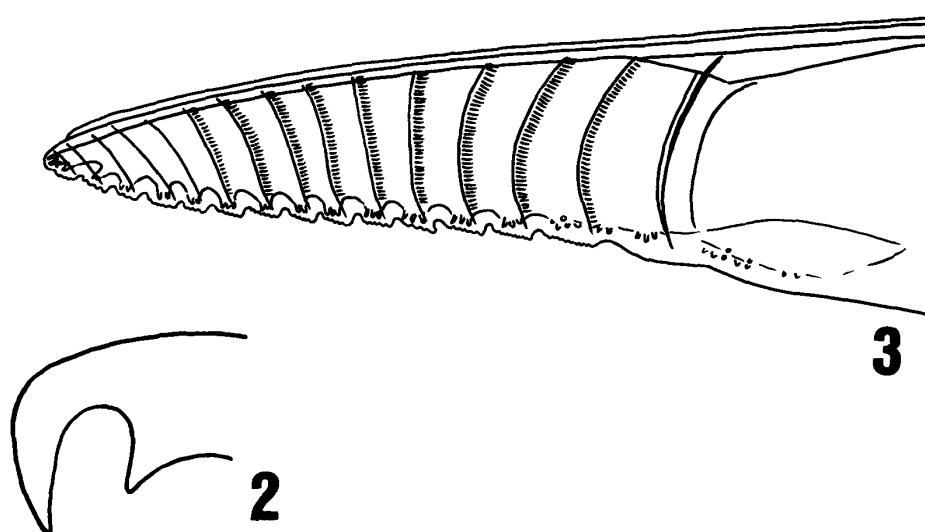


Fig. 1. *Nematus tiliae* sp. nov., ♀, holotype, dorsal view.



Figs. 2–3. *Nematus tiliae* sp. nov., ♀, holotype. — 2. Tarsal claw; 3. saw.

cenchri, and with darker metascutellum; mesepisternum yellowish, strongly infusate on lower third; mesepimeron infusate on lower part; metapleuron pale. Legs pale: coxae, trochanters, and femora yellowish white, tibiae and tarsi yellowish, tarsi somewhat darker. Wing venation piceous, stigma black, dark brown medially, C and Sc in front and anal veins basally yellowish. Abdomen pale, yellowish above and whitish yellow beneath; apex of sawsheath infusate.

Clypeus broadly emarginate in front. Frontal area rather flat, well defined by lateral and frontal walls (pentagonal), somewhat concave between them, separated from deep supraantennal fovea. Head in dorsal view broad behind eyes; postocellar area 1.5 times as broad as long, separated in front by shallow furrow and laterally by lateral sutures; distinct medial furrow disappearing posteriorly. Mouthparts normal. Antenna long, 3.35 times as long as head width and 1.13 times as long as costa plus stigma of forewing; 3rd antennal segment 5.1 times as long as wide. Median lobes of mesoscutum flattened, separated by well-defined suture. Hind tibia with distinct longitudinal groove on outer side. Stigma normal (much longer than wide). Hind tarsus moderately long, with basitarsus as long as three following segments together. Hind tibial spurs subequal to hind tibial width and 0.44 times as long as hind basitarsus length. Claws with large, very strongly bent outer tooth; inner tooth shorter and weaker, separated from outer one (Fig. 2). Ovipositor short, 1/2 length of hind femur without trochantellus, its main axes forwarded obliquely upright in lateral view. In dorsal view, sawsheath triangular, with acute apex and slightly rounded sides (Fig. 1); cercus somewhat shorter than sheath. Lancet as in Fig. 3.

Microsculpture: Head above shiny, with rather indistinct surface microsculpture. Mesonotum including scutellum shiny, with feeble and scarce punctures; posttergite glabrous. Mesepisternum entirely hairy, shining. Abdomen shining, with very feeble microsculpture.

Measurements (in mm): Length 7; forewing length 8; head width 1.96; thorax width (between outer margins of tegulae) 2.04; length of antennal segments 1–9 (scape length without radicle) 0.14, 0.10, 0.92, 1.06, 1.02, 0.90, 0.82, 0.79, 0.76; longest ocular diameter : shortest ocular diameter 0.8 : 0.6; malar space 0.15; distance between antennal sockets 0.22; POL : OOL : OCL 0.30 : 0.35 : 0.40; hind femur without trochantellus (length : width) 1.78 : 0.46; hind tibia (length : apical width in lateral view) 2.60 : 0.32; hind tarsus 2.1; hind basitarsus (length : width) 0.8 : 0.2; inner hind tibial spur 0.34; ovipositor (basal plate + sawsheath in lateral view) 0.96.

Male. Unknown.

Distribution. Japan (Hokkaido).

Holotype: ♀, Meiji, Akaigawa, 43°00.82'N, 140°53.89'E; 11–IX–1996, M. Ohara, hand pick [collected]; A social sawfly, Host: *Tilia maximowicziana* [Tiliaceae]. Deposited in the National Science Museum (Nat. Hist.), Tokyo.

Host plant: *Tilia maximowicziana* Shirasawa.

Remarks. Relationships of this new species with other species of *Nematus* are

unclear. It is characterized by an unusual shape of the claws with the outer tooth considerably bent and the inner tooth distinctly separated from the outer one. Therefore, in some keys, this species might run to *Pachynematus* Konow (in the broad sense) or *Polynematus* sensu Zhelochovtsev.

In the key to European sawflies (Zhelochovtsev, 1988), this species keys best to *Nematus* (*Pteronidea*) *melanaspis* Hartig; however, *N. tiliae* differs by its dark, almost entirely black stigma, paler coloration, longer antennae, as well as the shape of claws. Its larvae are associated with *Tilia*, not *Salix*.

Nematus tiliae is distinguished from the Japanese *Nematus lindqvisti* Togashi, according to the original description of the latter (Togashi, 1964), by its paler coloration (femora not dark above, mesopleuron mostly pale), longer antennae (in *N. lindqvisti*, the antennae are slightly shorter than the costa plus stigma of the fore wing and the 3rd segment is subequal to the 4th), and shape of the saw (Fig. 3).

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